COMMUNITY, INSTITUTIONS, AND COMMUNITY INSTITUTIONS:

Unpacking the intersection of institutions, community development, and decentralized governance in Guatemala.

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List of Figures and Tables:

Abbreviations, Translations, and Acronyms:

Acronym/Abbreviation; *Spanish*; English

Alcade Mayor *(municipal or indigena, i.e., indigenous)*

COCODE *Consejo Comunitario de Desarrollo*; Community Development Council

COMUDE *Consejo Municipal de Desarrollo*; Municipal Development Council

OMM *Oficina Municipal de la Mujer*; Municipal Office for Women

IDH *Indice de Desarrollo Humano*; Human Development Indicator

SEGEPLAN *Secretaria de Planification y Programacion de la Presidencia*; Planning and Programming Secretariat of the Presidency

PDM *Plan de Desarrollo Municipal;* Municipal Development Plan

SIM *Set de Indicadores Municipales;* Municipal Indicators Set

1. INTRODUCTION

"Never depend upon institutions or government to solve any problem. All social movements are founded by, guided by, motivated and seen through by the passion of individuals."

– Margaret Mead

If the goal of economic growth is human development, then engaging the process without participation is synonymous to having economic growth without development. Indeed, the power of engaged communities has fostered an infatuation with the concept of participation by and empowerment of indigenous and local populations. Similarly, the role of institutions in facilitating community participation has indoctrinated development policy and literature for many major bilateral development agencies and non-governmental organizations (NGOs).

This study examines the interaction of government and non-government institutions and community development in Guatemala, within the context of decentralization and diversity. The institutional role is measured via the presence of social (informal) organization and formal (government) institutional presence, and their impact on development outcomes within fifty-seven municipalities in the Western Highlands of Guatemala. I begin in Section 2 by detailing the complex and tragic civil war that mars the history of Guatemala, as well as the country's main development barriers and political structure. In Section 3, I review development literature surrounding institutions, and connect this to discourses on decentralization, participation and diversity. The empirical portion of the paper outlined in Section 4 begins with a detailed description of a tedious data collection

process, and the empirical strategy used to analyse it. The findings presented in Section 5 reaffirm the importance of the role institutions in facilitating development under a decentralized regime. These effects are additionally compared to determine what the scale of impact is for each institutional type relative to the other. Ultimately, I find that while both types of institutions stimulate development, the scale of impact is generally stronger with social institutions. There are several caveats that accompany this conclusion, which are related to the specific local conditions and the rationale for their influence in Section 5 as well.

With the growing interest in community participation and the role for institutions in development research, it is clear this study is timely in its contribution. Moreover, studies conducted on these topics tend to bypass Latin America due to lack of data, amongst other challenges. In the end, the conclusions discussed are by no means comprehensive or fully polished. Rather, the aim of this analysis is to create a provocative foundation to evoke further investigation and dialogue surrounding an important set of questions:

What is the role for institutions in facilitating community development, and how does this manifest under a decentralized regime?

and in turn,

Are institutions that are rooted in social organization (informal institutions) more or less effective than those established by government (formal institutions) at facilitating community development?

2. SETTING THE STAGE: Past, Present, Diversity and Decentralization

2.1 *Historical Background and Present Challenges: the lasting legacy of conflict*

> *"The armed conflict, yes it is over – the war of guns, the war of armies – but for us this doesn't mean very much because the war of hunger, misery and poverty still goes on in our community" – Lovell, 2000 (64).*

Such defines the ongoing metaphorical "war" in Guatemala – a 'war' of social and structural injustice. This quote is one of many similar sentiments given by an indigenous resident of the Highlands, detailed in Lovell's book: *A Beauty that Hurts: Life and Death in Guatemala.* Indeed, the country's rich culture and stunning landscape is disfigured by a tragic history and shocking inequality. From 1960 to 1996, over 200,000 people were killed in what was deemed a genocide and Central America's longest and bloodiest civil conflict by the UN sponsored Commission for Historical Clarification Report (CEH, 1999). Of the 200,000 victims, 83.33% were Maya Indians, and were massacred in a "strategically planned policy, logical and coherent sequence". In fact, 93% of these atrocities were directly attributed to state security forces (Lovell, 1995).

The brutality of the civil conflict is characterized by common trends of political emergencies—corruption, extreme violence, displacement, and ethnic fractionalization. The severity of the violence is of particular relevance to current challenges for development within Guatemala for its footprint of exacerbating deep-rooted fragmentation of the different ethnic groups within the country (Jonas (1999), 94). In spite of the 1996 negotiations, peace has simply represented

another form of violence for marginalized groups and the 53% of the population below the poverty line. The length and severity of the conflict set a rough track for rehabilitation and peace in Guatemala with extensive destruction of physical capital, institutions and over a million displaced people – many of whom chose to leave their papers at home or denounce them out of fear, making their post-conflict legitimization difficult (Elias and Wittman, 2005). Additionally, as mentioned above, the brutality and longevity of the conflict has created profound barriers to cooperation between ethnic groups.

In fact, the depth of ethnic conflict in Guatemala dates even earlier, to colonial origins. Examples of this include agrarian conflicts of property rights and other social exclusionary aspects that challenge the country with further inequality. Today these barriers remain visible not only in economic indicators, but also in the high levels of mistrust and low incentives for collaboration between different indigenous ethnic groups and the non-indigenous population. Each ethnic group has developed a set of relations and experiences over time based upon local conditions, resources and history that affect their incentives and preferences in decision making. Consequently, power relations and dynamics within communities are as diverse as the communities themselves (Elias and Wittman, 2005). For the scope of this study, investigating diversity and its relationship to institutions and development is in terms of the ethnic divide between the indigenous and non-indigenous populations as a whole, as opposed to the fragmentation within indigenous groups.[1]

[1] The motivation for this decision will be discussed later in the paper. In the meantime, it may be of interest to the reader to note that there are actually twenty-three different ethnicities and twenty-one different languages in Guatemala, which makes it an interesting case study for considering the impacts of diversity on an entirely different dimension of complexity (Elias and Wittman, 2005).

It is useful here to identify several elements of terminology relating to the ethnic make-up of Guatemala. Within this paper, the term 'indigenous' refers to groups of Mayan decent, while 'ladino' or 'non-indigenous' will represent those who are not[2]. Further, within the focused region of this paper, let the following generalizations be defined unless otherwise specified:

1. Municipal authorities are considered as non-indigenous and urban.[3]
2. Social institutions are generally considered indigenous.
3. 'Community' refers to a rural area within the municipality in question, made up of indigenous populations, and inclusive of different sized areas (eg. aldea, cabecero, casaria, etc.)[4]

The Western Highlands – our region of study – is one of the more populous regions in Guatemala that includes a high concentration of Mayan peoples. Moreover, it was one of the most severely affected regions during the civil war and accordingly retains a strong level of *misconfianca* (mistrust) against the ladino population and ruling structures (Larson, 2007). As we will see, this mistrust has a significant

[2] To add to this complexity, there is another level of diversity relating to persons who are mixed Mayan and Ladino, as well as the indigenous peoples who have resettled in Guatemala after fleeing as refugees in the civil war. These (and more) additional levels of cultural identity are not distinguished in this paper due to the scope and regional focus. However they are interesting and influential factors of development in other areas of the country, particularly the *corridor seco (dry corridor)*. For more information on identity in Guatemala, see Villatoro (2002) or Dehart (2009).

[3] In many cases, the make-up of the COMUDE, OMP, and related councils boast an indigenous presence. However, it is common for these roles not to have decision-making power or a strong scale of influence in the operations of the Municipality (SEGEPLAN, 2012). Regardless of the ethnicity of the ruling authorities themselves, the system and corporation of the ruling authorities is not consistent with indigenous cultures, and is thereby considered 'non-indigenous'. Contrarily, informal institutions are defined as such in this paper because of their close relationship with and composition of the indigenous population and respective cultural norms.

[4] These terms classify an area based on its size similar to what may be considered the difference between a town and a city. Although it is beyond the scope of this paper, this concept is an area that calls for further investigation as it could hold significant influence over the municipal authority, as larger sized communities imply more federal government funding, as well as often more resources (PRONACOM).

impact on the success of participatory development efforts and institutional interactions between government and the indigenous communities.

These issues have created major obstacles for development planners to overcome in order to achieve inclusivity and efficiency in representing the diverse populations (Preti 2002, 116). Inequality is a major challenge in land distribution, and within the rural and informal sectors for indigenous peoples. According to the World Bank Country Report on Guatemala (2004), there are issues of poor contracts and property rights, extensive wage gaps and unequal capital ownership with less than 40% of individuals in rural regions having titles to their land. Between 1998 and 2007, the country's GINI index saw a mere improvement of 0.7%, placing it as the 13th worst in the world at 55.1 (World Bank DataBank). Furthermore, over half of the population remains below the poverty line, with the poverty among indigenous groups—which make up over 65% of the total population—at an average of 76% (CIA World Factbook). These inequalities cause individuals to have minimal bargaining power or collateral to access credit for loans or investment—a factor exacerbated by the lack financial lending institutions. The combination of credit, institutional, and contract challenges has thus created a role for the distribution of financial aid to communities to be administered by public programs (institutions), or NGOs.

Another significant barrier to development identified by Varangis, et. al. (2003) and in the World Bank Country Study on Guatemala (2004) is the lack of infrastructure for rural regions. The impact of isolation and inadequate infrastructure in the Western Highlands is severe. Poor roads and communication

channels create economic barriers such as high transaction costs and low access to markets, as well as further impede the development of solid financial (and other) institutions in the area (Varangis, et. al, 2003). Effective institutions that can support the decentralized government and participation in community development planning have the potential to mitigate the various inequalities and promote long-term sustainability in development. However, as is evident above, there are still significant constraints that require massive investment for any strategy to succeed.

Turning the focus regionally, let us consider the above constraints specific to the Western Highlands, the area sampled for this study. The region is defined within the organization of the PDMs on the SEGEPLAN website, including municipalities from seven different departments. Two of the most northern departments in the region—Huehuetenango and Quiche—boast some of the more important urban areas and largest indigenous populations. Within the dataset used in this study, the average concentration of indigenous people is 77.4% population. This high proportion of indigenous population is one of the motivations behind selecting the Western Highlands for this study, as it was one of the most brutalized areas from the war. Several of the more tangible implications of this war can be taken from descriptive statistics of the municipalities in this dataset. To begin, within the sample used in this study, the average proportion of people living below the poverty line is high as 81%. The range of this indicator is vast: going as low as 25.92% in the most well off municipality, and reaching as high as 97% in poorest. This inequality is reflected in some of the infrastructural statistics of the region. For example, potable water and electricity is accessible by 66% and 76% of the

population on average, respectively. However the range reaches 27% for electricity access and a mere 18.6% for access to water on the lower bound, and as high as 96% for the upper bound of both.

These inequalities are similarly present in the political and institutional structures of the region. In particular, the access to education beyond primary school within the Western Highlands represents another significant constraint. Primary education coverage rates averaging near one hundred percent drop towards an average of 35% when considering enrolment at the secondary school level. of only twenty-six percent at the secondary school level. Again, there is extensive inequality in the range between municipalities with this indicator, with coverage rates that range from 7.9% to 100%--a difference of over 92%! The barriers to secondary school enrolment are consistent with the aforementioned challenge of poor infrastructure, where the locations of schools become sparser after the primary education level. In addition, this problem is exacerbated by the opportunity cost of sending a child to school. In an area such as the Western Highlands a child in school means forgone labour towards what is usually subsistence farming, creating a high opportunity cost for the family (World Bank, 2004).

As we can see, Guatemala—in particular the Western Highlands—has a shaky foundation upon which to build its future progress. The above discussion of the country's bloody history that the major issues, i.e., ethnic divide, infrastructure, education, inequality and mistrust (to name a few), demand support from both government institutions and social organization. As the next part describes, the

government of Guatemala has attempted to create better formal institutional support via a series of decentralization laws that provide municipal governments with the opportunity to work more closely with communities.

2.2 *The Guatemalan political economy and decentralization process*

Decentralization has been a strategy for developing countries with ethnically diverse populations since the mid 1980s (World Bank, 2000). The driving and justifying concept behind the reforms has been touted as the establishment and democratization of local government to better provide services, local development, and resource management (Andersson, 2006). Prevailing economic wisdom suggests that this is achieved through better access to local information with governments and communities working closer together – a concept that will be explored further in subsequent sections.

Decentralization was first introduced in Guatemala with the 1996 Peace accords, which included the *Accord on the Identity and Rights of Indigenous Peoples*.[5] This first step represented the transfer of power to a municipal level in the management of natural resources, specifically forestry (Larson, 2007). [6] Decentralization expanded in 2002 with three important laws to further adapt elements of the accords, as follows:

[5] Subsequent information concerning this and other laws is taken from Fundacion Movimondo (2004) and Larson (2007), unless otherwise stated.

[6] For a thorough discussion of forestry decentralization in Guatemala, see Larson and Barrios (2006)

The Municipal Code (Decree 12-2002) recognizes municipal authorities as the official recipients of decentralized powers in law and practice. Along with devolved powers, the municipalities receive ten percent of the national budget in addition to other taxes and government transfers. Furthermore, this decree recognizes indigenous authorities, such as "Indigenous Mayors", which originated from the colonial government to oversee indigenous populations. Though few remain and they do not have any authority over the municipal government, it legitimizes the importance of the tradition. Similarly, the code validates indigenous rights to traditional practices, such as selecting their own leaders, and orders the Municipal Council to consult groups in any affairs affecting these rights.

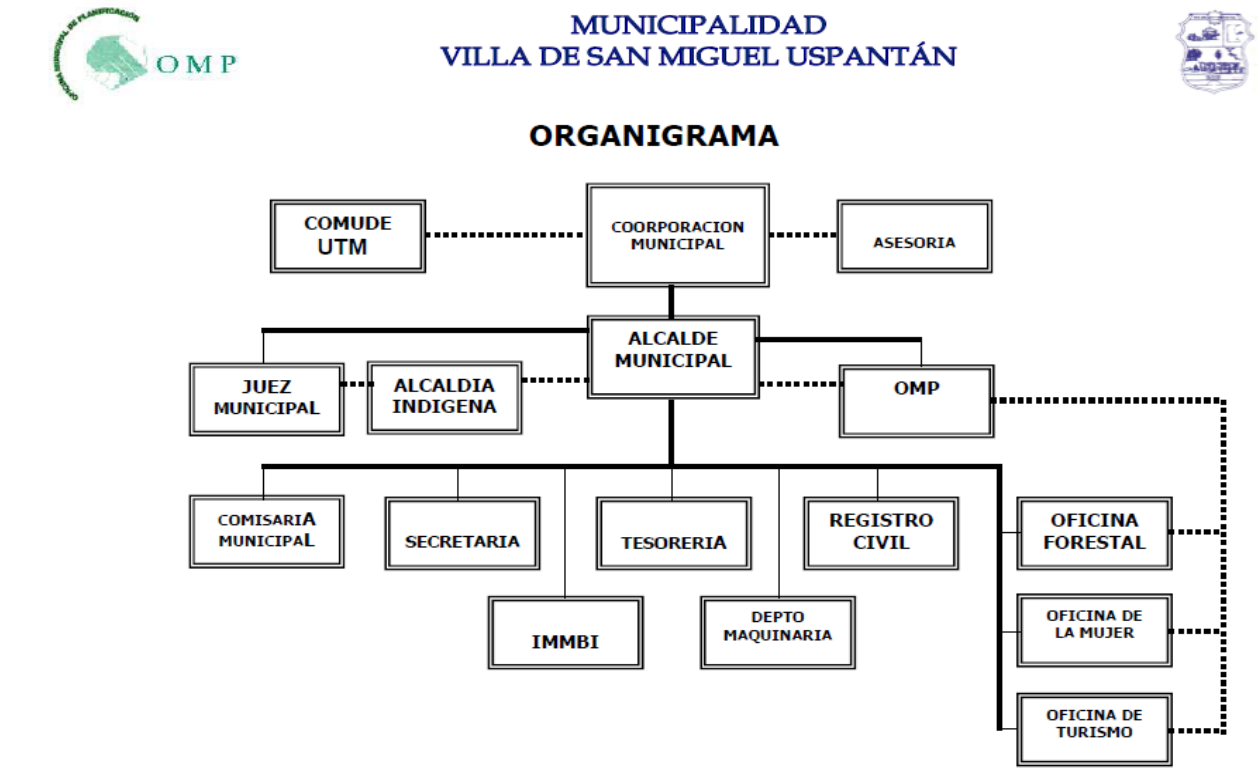
Next, the Decentralization Law (Decree 14-2002) defines decentralization as the transfer of decision-making power to municipal authorities *and* to 'legally organized communities, with the participation of municipal governments' (Art. 2)[7]. In relation to this, the Law of Urban and Rural Development Councils (Decree 11-2002) creates the avenue for which community participation may occur in local and municipal decision making—the Community Development Councils (COCODES), and the Municipal Development Councils (COMUDES). The COCODES are formed according to the 'principals, values, norms and procedures' of the community, while the COMUDES consist of up to twenty representatives selected by the COCODES in addition to the mayor, councillors, and other representatives of public and civil

[7] Note here that this law does not officially recognize indigenous authorities *as* authority in the decision-making context. Indigenous 'mayors' are parallel structures to the Mayor, but are not elected and, again, do not have real decision-making power at the municipal level.

society. Finally, there is the Municipal Council, which represents the elected authority headed by the mayor.

The intention of the political structure in Guatemalan municipalities is that the COMUDES, who maintain all decision making power, facilitate the operation of the COCODES in addition to engaging community participation, inter-institutional coordination and assessing and prioritizing municipal development plans and projects based on the needs established by the COCODES (Article 12, Decree 11-2002). Additionally, the councils are intended to fit into a hierarchy of councils from the community to the municipal, departmental, regional and national level. An example organizational diagram from the municipality of Uspantàn is given in **Figure 1** below.

Figure 1: Organizational Diagram of Uspantàn
Source: Oficina Municipal de Planificacion, Uspantàn.



Within this diagram, there are a few parts of the hierarchy in particular that are worth walking through. From the top left, we see the COMUDE and Corporation of the Municipality (Corporacion Municipal) working together, and overseeing the Mayor of the municipality (Alcade Municipal). The Mayor then works with the Indigenous Mayor (Alcadia Indigena), and related councils as can be seen moving down the diagram. The COCODEs here would be considered working with the COMUDE, connecting to the box in the top left.

Some scholars argue that in spite of the potential of decentralization in Guatemala, the laws fail to address the problem of mistrust between rural Mayan peoples and their local governments, as well as that of extreme inequalities in access to assets such as land. Indeed, while the diagram appears inclusive and organized, as is often the case between theory and practice, the reality is not as it appears on paper. As Larson (2007) remarks, if political parties have rarely represented indigenous interests, neither have the local authorities that have been elected in competitions among those parties. Curiously, even in majority indigenous municipalities, indigenous people often fail to gain representation, or at least meaningful representation. Undeniably, the challenges of entry into the political sphere embody the unequal power dynamics that exist in Guatemala even at the municipal level in majority indigenous municipalities. The investigation of this begins in the following section with an examination of established theory and trends in participatory development under decentralization, and the institutional role for facilitating its success. Additionally, the issue of ethnic heterogeneity described

above is connected throughout the review of literature in terms of its implications for community development and institutions.

3. Literature Review

In the hour of globalization, the resources of researchers and policymakers are largely directed towards development strategies, processes and outcomes. This literature review considers and connects three main topics related to participatory development. I begin with the literature supporting decentralization and its relationship to participatory development. Next, I introduce literature on diversity, a factor that affects the effectiveness of decentralized governance, development and institutions. Finally, I turn to the institutions themselves and connect all topics to the Guatemala.

3.1 Decentralization, participation, and the efficiency of information

Decentralization, or the devolution of power from a central government, has come to dominate the language of development policies for governments and bilateral institutions around the world. The World Bank, for instance, has embraced the policy as one of the major governance reforms on its agenda (World Bank, 2000). For an example of decentralization in action, consider two of the largest countries in the world: China and India. Decentralization has been attributed as the major institutional framework to set the stage for industrial growth in China, largely occurring in the non-state, non-private sector (Bardhan, 2000). In India, the major economic reform in the early 1990s was released around the same time as a

landmark constitutional reform that favoured decentralization, leading researchers such as Bardhan (2000) to correlate the success of the former to the timing of the latter.

One of the primary arguments in favour of decentralized governance is that the transfer of power to institutions closer to the local level enables better access to local information and engagement of local populations in decision-making (Bardhan, 2000). The benefit of local information relates to prevailing wisdom in economics; that the localization of information in turn augments policy-making capacity and lowers transaction costs. Consequently, this produces more accountable, equitable and efficient development outcomes—a process commonly referred to as 'downward-accountability' (Gibson and Lehoucq, 2003). In other words, an effective decentralized programme can foster participatory development—a necessary element to improve the capacity of socially and economically marginalized peoples in decision making over their own lives (Cooke and Kothari, 2001)[8]

In the context of Guatemala, the need for and challenges of participation are significant. I will introduce the need for participation in this section, and touch on some of the challenges it faces in Sections 3.2 and 3.3. To begin, consider Keefer and Stasavage (2003) who demonstrate that a contract that includes multiple veto players (i.e, those who have a say in the implementation of a project), generates more credible, stable and efficient outcomes. The value of their study can be

[8] Note that participatory development is used interchangeably with community development in this paper. While participation itself cannot be directly measured in this study due to data limitations, the investigation of it manifests through the necessity of any development outcome to include local participation, the consideration of social organization, and the general potential for the decentralized political structure and respective institutions to facilitate it.

considered in the context of interactions between an institution and recipient community: veto power of the community rises with more participation, which creates an avenue to foster trust and better access to local information.

The benefits of local information and empowered communities can be seen in the context of Guatemala in a study by Morales and Perfecto (1999). The authors examine traditional knowledge and pest management in the Guatemalan highlands in relation to community participation. They discover the adoption of integrated pest management (IPM) to have been limited by the failure of researchers to promote genuine farmer participation in their efforts (Morales and Perfecto, 1999). In another case, the Mayan village of San Pedro Almolonga faces exacerbated symptoms of social fractionalization as a result of top-down development practices. This is caused by envy created through enabling capital accumulation that was outside the cultural norm, allowing some groups to benefit over others (Goldin, 1992). Participation is also in a recent joint project between the World Bank and the National Competitiveness Program of Guatemala (PRONACOM) for Rural Economic Development. The project objectives highlight the need for local NGOs to act as administrators in partnership with community members, suggesting that the NGOs which are locally based and community focused are better able to adapt to cultural norms, and in turn facilitate trust and participation (2009).

Undeniably, the support for participation and decentralization has broadly been established in literature. Then, the question turns from *why* the two concepts are important, to *how* to implement them and what they means for governance. Unfortunately, in practice, local authorities often remain without discretionary

authority, technical support, equipment or finances to truly engage local participation in an effective and representative manner (Andersson, 2006, 578; Larson, 2007). These difficulties in turn restrict the effectiveness of local governance, and create a role for external agencies. In particular, with respect to participation, areas that have higher levels of ethnic division are additionally plagued by coordination and incentive challenges that exacerbate and are exacerbated by ineffective governance and ethnic fractionalization. This is demonstrated by Bardhan (2000) who examines difference scenarios of local interest group capture under decentralization, finding higher local capture in areas of high poverty where marginalized populations are more vulnerable. These are implications are important for Guatemala, which suffers from high poverty, diversity and governance issues, as has been discussed. To further relate to Guatemala, Bardhan's work in 2006 suggests that if the processes of decentralization that does not include the decentralization of funding as well, it can limit the expansionary effect of the process. Recall from Section 2.2 that in Guatemala, government transfers are in fact decentralized along with decision-making authority, indicating it has the potential for success if other barriers can be overcome.

Beyond structural restrictions that affect the agency for a decentralized government to make efficient choices, responsibility of becoming a decision-maker has some implications to consider as well. This responsibility implies that the authority—a principal actor—is subject to their own preferences and influenced by internal (political, personal) or external (donors, societal and public dynamics)

pressures. In turn, the decisions made to allocate available resources become representative of the political, social and economic landscape of the setting as the ability to influence the authority in question will relate to organizational success of local interest groups. This is especially relevant in a case such as Guatemala where local authorities can stand for re-election (Andersson 2006, 579). This has particular significance to identity and culture, as the dynamics between local authority and community imply a contract that recognizes existing or creates new sets of power dynamics in the public domain. Understanding these relationships and how different incentives influence one another is essential for designing contracts between parties that maximize the efficiency of their participation and contribution to development planning. Elias and Wittman (2005) further affirm this sentiment in the context of forest management in Guatemala. The conclusions of their study suggest that the decentralization programme does not support the cultural norms within local institutions linked to communal forests. In fact, it actually weakens the system of communal management.

In spite of its difficulties, a decentralized regime is attractive for its capacity to engage local populations in development, an essential factor to achieve successful development outcomes as we have explored. However, this is plagued by a variety of challenges, from the process of decentralization itself, to local conditions such as power dynamics and ethnic heterogeneity. In the following section, this issue of diversity is examined in more detail. In specific, the questions of *why* diversity matters in addition to *how* it has influenced development will be considered to understand its interactions with participatory development and institutions.

3.2 Diversity: a setting for rich culture and poor cooperation

The impact of ethnicity on development can be traced to economic theory of incentives—particularly economic, social, and moral. Numerous empirical studies have demonstrated that there exists a higher level of cohesion in preferences (e.g., social and economic), trust, and in turn, altruism (moral) in a homogenous society (Dehart, 2009; Jackson, (2009); Keefer and Stasavage, (2003)). The effects of diversity can be examined in the context of governance in terms of both supply—of participation, or collective action—and the demand for development initiatives, e.g., in preferences for public good provision (Jackson, 2009).

In the context of supply, less trust between agents of different ethnicities has been shown to lower incentives for cooperation by increasing both the costs of social transactions and the risk of misinformation (Keefer and Stasavage, 2003). Consequently, a multitude of empirical studies have linked these implications of heterogeneity to inefficiencies in collective action (Putnam 2001; Jackson 2009; Miguel and Grugerty 2004; Ryndin and Holman 2004). In other words, communities may be less likely to participate in development planning if they are unwilling to cooperate in the first place. Similarly, mistrust created by these issues has been linked to lower levels of social capital—a critical element for enabling participatory governance and the success of institutions (Knack and Keefer, (1997); Putnam (1993); Ryndin and Holman (2004)). The importance of social networks in creating norms for reciprocity and trustworthiness was described as early as 1993

by Putnam, and has since been recognized as a critical link to civic life (Wilson, 1997; Dale and Newman, 2010; Holder, 2006).

With respect to demand, societies that are heterogeneous may define needs differently due to variations in cultural preferences. This can affect aggregate demand for the provision of public goods, creating difficulty in prioritizing development planning. This is most commonly examined in terms of educational preferences, the location of a public good (e.g., water system), or where groups of different identities, culture and history may be unwilling to share a public good with another ethnic group (e.g., a forest or related natural resource) (Jackson (2009); Miguel and Grugerty (2004)).

An important extension here is the consideration of not only what the impacts of diversity are, but also to understand how they differ in a given context. This is examined by Jackson (2009) in a study of public good provision in rural Africa. As he suggests, if the root challenge presented by diversity lies in preference variation, than the majority group will be able to influence the resulting good. However, if the difficulty lies in a collective action problem between ethnic groups, than the focus cause lies in governance. Jackson's conclusions have important implications for this study: they put value behind the question of *why* diversity matters—an essential aspect of exploring the interactions of institutions given the local conditions in a municipality.

To apply this to case of this study, Guatemala, recall the indigenous make-up of the country. Not only does Guatemala have twenty-three different ethnicities and

twenty-one different languages, but the country's four decades of civil conflict between indigenous populations and non-indigenous government has exacerbated mistrust between the indigenous populations and government. Indeed, this very question—*why* diversity matters to development outcomes—is an underlying question in my examination of the interactions of government (formal), and societal (informal) institutions. In an ethnically diverse municipality, negotiations between different ethnic communities or between the communities and the municipality may be rendered less efficient if agents have incentive to manipulate information based on mistrust, or may not occur at all if the cost of negotiations or attaining information from one another is too high (Jackson, 2009). Thus, while a diverse culture is often considered a rich one, the difficulties it presents for development are numerous. With these challenges, along with the efficiency of community participation and the capacity for decentralization to facilitate it in mind, I now turn to connect these issues and examine the role of institutions.

3.3 *Community, Institutions, and Community Institutions*

Broadly defined, both formal and informal institutions have been established as critical tools for overcoming barriers to successful development, especially in a decentralized political system. However, there are a variety of factors that can hinder the effectiveness of the institutions themselves. As was the case with participation, a major factor among these is the issue of diversity, which plays a significant part in institutional formation and capacity. This and other challenges, and their subsequent interaction with institutional roles are considered below.

Theoretically, intervention by an outside institution can stimulate development by enabling interaction between government and communities that mitigate the cost and risk of participation. With access to local information, institutions can create incentives for communities to invest time and resources into development planning. In practice, however, many institutions face a vast range of governance issues that undermine their success. There are two general categories of economic institutions, considered in terms of the constraints they impose: formal institutions, such as government structures and laws, and informal institutions, or those relating to cultural and behavioural norms (North, 1994).[9]

It is both relevant and important to note more specifically here what 'informal' refers to in this study. North's conceptualization of informal institutions above is similarly applied to research by Jackson (2009), Tabellini (2005), and Knack and Keefer (1997), amongst others. The data in this study consider the presence of community associations and locally based NGOs grouped as 'informal' institutions. The motivation for this is twofold: to better relate the definition to the data itself, as will be described in *Section 3*, and to create a distinction between the types of institutions examined in terms of their relationship to communities. As we have seen, social and cultural norms most certainly play a role not only in the formation, but also the governance of these 'informal' institutions at the local level (i.e., trust improves cooperation, enabling communities to self organize better).

[9] In line with this, the reader may have already noticed that the term "informal" institutions in this paper is used interchangeably with "social" or "community" institutions. It is additionally worth noting that the formal/informal distinction has also been referenced through the terms "public-order" and "private-order" institutions – see Grief (2005), for example.

Accordingly, this distinction—while more tangible than the general consideration of "informal" institutions in the literature—is appropriate for the scope of this study.

Returning to the institutions themselves, consider Acemoglu et al. (2001, 2002, 2005) who use settler mortality rates to measure whether the institutional and political establishments in a country's colonial history affect its current structure. Their findings demonstrate the importance of both historical factors and formal institutions on development. This historical element was also studied in the context of informal institutions by Guiso et. al. (2008) to consider the impact of a historical period of independence on social norms. Like Acemoglu et. al, Guiso et. al. find that informal institutions indeed play a significant role in facilitating development, and that their historical composition matters. Similarly, informal institutions are found integral to growth in both impact and longevity in studies by Knack and Keefer (1997), Keefer and Stavassage (2003), and Tabellini (2005), amongst others.

While the importance of institutions to development has been widely established in literature, there is less extensive research that considers the impact of the two types of institutions relative to each other—an area this paper strives to contribute to. In his study of public good provision in rural Kenya, Jackson (2009) demonstrates the necessity for multilayered interaction between formal and informal institutions. He describes these interactions as taking three forms. The first two credit formal institutions with assisting in the development of social norms (recall: informal institutions). Specifically, government institutions can create incentives to stimulate the economic activity necessary to the development of social

norms, such as collective action for a public good. In addition to this, institutions reduce inequalities in the share of benefits from public good provision. This means that an opportunistic individual who may have taken advantage of a collective action scenario is less able to do so with the enforcement of contracts by a formal institution, encouraging the development of trust, and in turn, informal institutional presence. The third form of interaction describes what Jackson refers to as a 'trap' – strong government institutions may crowd out participation and the formation of social capital. In the context of this study, these interactions relate to informal institutions terms of developing the social capital necessary for social associations to form.

The above interactions suggest that economic development may necessitate multiple levels of institutional relations rather than an approach focused solely on developing the quality of one institutional element. Andersson (2006) additionally considers interactions between government institutions and cultural norms in the context of the adaptability. The author conducts a comparative analysis of the decentralization process in Bolivia versus Guatemala, highlighting the capacity of Guatemalan municipal authorities as institutions to remain adaptable in their negotiations with communities. This in turn enables negotiations to be adaptable to different preferences and incentives, specifically the social norms that comprise the informal organization of the community. Similarly, Larson (2007) compares projects within two municipalities in Guatemala and examines how the level of success correlates to the relationship between municipality and community. In both cases, there is a demonstrated need for interaction between the municipal authority

– the formal institution – and various community associations, or informal institutions.

As we have seen throughout this literature review, the social, economic, cultural, political, historical, and institutional composition of Guatemala dictates a seriously complex set of conditions for development planning. We saw that engaged community participation is key to the success of an effective decentralized government, and in turn, development efforts. In addition, it is demonstrated that institutions must be adaptable and interactive with one another to successfully support governance and development efforts. Finally, throughout the above literature review, the importance of ethnic diversity on both participation and institutional interactions was established. In the next section, this literature is used to form the empirical strategy and later, to interpret the results.

4. Methodology

4.1 Data

Acquiring data below the departmental level in Guatemala presents a significant challenge to the researcher.[10] International databases that consider the area, such as the Latino Barometro (http://www.latinobarometro.org/) only cover national and departmental data for the country. They cannot be separated regionally (i.e., to focus on the Western Highlands) nor give information at the municipal level. This issue is also the case for relevant data available through the Ministry of Planning and Programming for the Presidency (SEGEPLAN,

[10] In Guatemala, a 'department' represents the equivalent of a province in Canada, a state in the United States or Australia, etc.

http://www.segeplan.gob.gt/2.0/). While SEGEPLAN boasts a variety of public information – and remains the source of the dataset extracted for this study – its existing datasets do not extend below the departmental level, making municipal analysis impossible.

The most pertinent of options for seeking data was the The National Statistical Institute (INE, http://www.ine.gob.gt/np/). Unfortunately, over six weeks of attempted communications via multiple outlets, the institute was unresponsive to any request for the data packages listed on the website. A final effort was made to acquire data via colleagues at PRONACOM, Helvetas (a Swiss funded, locally based NGO), Fundacion Movimondo (local NGO), and at the University of Guatemala. For the most part, each of the organizations was able to provide primary research that assisted in the development of this study. However, none were able to provide municipal data applicable to the analysis conducted below.

Accordingly, data was extracted from a set of Municipal Development Plans (PDMs) released by SEGEPLAN. Each document was prepared by local actors in the respective municipality, in collaboration with formal institutional support at the municipal and national level. The documents were provided at no cost and were comprehensive in nature, averaging between ninety to one hundred twenty pages. They address all areas of the municipality, including: the historical and cultural background, detailed political, economic, demographic, social and institutional elements, as well as challenges, priorities and strategies for development until 2025. Data was systematically extracted from the PDMs using keyword searches on main

indicators, and then reviewing the respective section to ensure the context of the given statistic was valid. The list of keywords and a more detailed description of their relative process of data extraction can be found in *Appendix 1*. In 2012, SEGEPLAN also released a series of documents that summarized many economic and demographic indicators in the PDMs, called the set of municipal indicators (SIM). These were additionally used to ensure internal validity of the dataset by verifying existing entries and expanding or updating where appropriate.

The initial sample selected for the Western Highland region was primarily from the two northern departments described in Section 2 – Huehuetenango and Quiche. The data covers thirty municipalities from the department of Huehuetenango, and twenty-one from Quiche. Six municipalities were also considered from the departments of Quetzaltenango and Chimaltenango to check for robustness, specifically that the samples from Quiche and Huehuetenango were indeed representative of the population of municipalities within the region. As suspected, their inclusion did not significantly affect the conclusions, nor did consideration of just Huehuetenango or Quiche on their own. A major challenge with the extraction of data from the PDMs was that, in spite of a generally standardized content structure, the documents were inconsistent in their recording of some important indicators. Relevant indicators that were too inconsistent to be used in the dataset are as follows:

- The year of implementation of functioning COCODEs and COMUDEs
- The rate of indigenous participation in COCODEs and COMUDEs
- External assistance in setting up the councils

- Quality of councils (how often do they meet, are they representative, etc.) and institutional support (are they empowering community, or simply making decisions for them)
- Significance of an actor (institutional, organizational or individual leader) to community, i.e., with respect to decision making power and overall influence.
- In addition, there was no consistent measure for transportation infrastructure (cost, road access and type)

As a result of this and the considerable care taken to ensure the validity, consistency and objectivity of the observations that were recorded, the dataset is limited in both depth and size. If further data could be accessed with respect to the COCODEs and COMUDEs, as well as the decision making power of various actors considered, a far more detailed analysis would result. Given their composition of community members, the organization, longevity, and effectiveness of the COCODEs, as well as their relationship with municipal authorities would be excellent indicators of successful participatory development in Guatemala. Moreover, such information would give further insight as to the direct relationship between institutions and community participation, identifying an area for future research. Nonetheless, as the model and trends below describe, the dataset extracted from the PDMs provides a valuable foundation to build upon.

4.2 Empirical Strategy: defining the model and variables of interest

The model below specifies the measure of development using the level of poverty in the region. Recall that the literature described above has demonstrated the development and community participation are indeed synonymous, placing importance on the roles of the decentralized municipal government, formal, and informal institutions. In the case of Guatemala, the intention of the decentralization

decrees and laws surrounding the creation of COCODEs was to support local participation in post war development. As suggested above, without information on the functioning of the COCODEs themselves, their quality could not be measured as an indicator of successful *participatory* development.

Accordingly, I consider the level of poverty as an indicator of how effective development has been, assuming that it will reflect some level of participation within the decentralized context. Moreover, it is used to judge the effectiveness of development outcomes given the presence of each type of institution with presence in the municipality. This measure differs slightly from other relevant studies that consider institutional presence. For example, Jackson (2009) and Khwaja (2006) consider public good provision as a dependent variable to measure the success of collective action. Additionally, literature that focuses more heavily on the role of institutions alone tends to be at the national level. In these cases, the impact of institutions is measure with some sort of growth diagnostic, such as GDP or output per worker (Acemoglu et. al, 2001). In each of these studies some measure of poverty is included, such as average wealth of the community. Accordingly, given the nature of the data and the focus of the paper, the level of poverty can be considered an appropriate measure. This is further confirmed in section 5.2, where a variety of alternate specifications are presented.

In terms of independent variables, institutional presence is described by the municipalities themselves within the PDMs, which divide institutional presence into six subsections, loosely defined as follows:

1. **Social** – *social organizations or civic associations, consistent with the definition of informal institutions given above; e.g., association of local farmers.*
2. **Non-governmental** – *this includes more formal structures of social organizations. To be categorized as an NGO, the organization must be locally based, community focused, and comprised of local indigenous actors with decision-making power. In other words, it must fit within the structure of social and cultural norms of the communities it works with; e.g., NGO of indigenous women for education, locally based, reflective of cultural values, and comprised of community members*
3. **Political** – *These consider municipal councils or institutions, e.g.: COMUDE.*
4. **Institutional** – *Institutional presence is a main indicator of 'formal' institutions, including government organizations that implement programs or projects within the community, such as the Ministry of Education (MINEDUC).*
5. **Private** – *private institutions such as banks, dentists, etc.*
6. **International** - *external aid, such as bilateral government donations, and etc. Note: there are some factions of international organizations that have local chapters composed community actors, which were categorized (by the municipalities themselves) under 'Institutions', and fit the definition.*

The PDMs not only categorize the institutions, but also provide a list of the names of each institutional actor present. This list enabled a more thorough examination of the types of organizations to ensure they were consistent with the above given definitions of 'informal' and 'formal' institutions as I categorize them (to be described below). In addition, I was able to ensure that the grouping of the institutions were consistent between municipalities as well. This was a valuable step, as in some cases there were discrepancies such as an NGO considered 'international' in one municipality's PDM and 'local' in another municipality's PDM. In a case of such a discrepancy, the institution itself was investigated further to determine if it fit the characteristics of 'informal' to be included within the NGO/social institutional category, and how it was perceived by the communities themselves. The only notable example of such a case where the NGO was still

included amongst the 'informal' institutions is described in *Appendix 1*. Discrepancies were more commonly noted where political and institutional structures were mixed, or the same between NGO and social institutions. This in turn contributes to the rationale of my grouping of institutions below.

Using this breakdown of institutional presence as a base, I further combine groups to categorize two main types of institutions by the formal and informal definitions given above:

1) Social and Non-Governmental Organizations, which leads to the creation of the variable *ngosoc*; and

2) Political and Institutional structures, which generates the variable *instpol.* Both *ngosoc* and *instpol* are described in further detail in Table 1 below.

The rationale for grouping Social and NGO categories together as 'informal' institutions, as well as political and institutional portions together as 'formal' institutions relates to several factors. The first is the blurred distinction between the categories, as demonstrated by the discrepancies described above. In particular, some government institutions working at the municipal level were recorded as political in a few municipalities, and institutional in others. Similarly, some municipalities did not use the NGO category at all – rather, they grouped NGOs as social institutions, or the vice versa. Regardless, the institutions themselves within each category were analyzed in the context of their interactions with the communities, and, more importantly, the communities' perceptions of them. In other words, the categorization distinguishes between the institutions' level of trust and involvement with social norms in their relationship to communities. This is also

consistent with literature that has suggested non-governmental, community focused organizations are stronger forces for getting close to communities, even if they are limited in their capacity to provide services due to resource constraints (Opare, 2007; Dehart, 2009; PRONACOM, 2005). Recall that trust leading to social organization was one of the foundational values in the definition informal institutions, indicating that this categorization is appropriate for the scope of this study. Moreover, the above logic works in reverse to justify the grouping of the political and institutional categories.

With respect to the private and international institutions, these were not included in the model. While these would be an interesting layer to consider in terms of institutional interactions, neither category was reported enough to have a significant influence on the results. More importantly, while the issue of mistrust extends to many categories of entities that are external to the communities, it is at a different level when directed towards Guatemalan government, i.e., the political and governmental institutions. Consequently, while private or international institutions could arguably be placed within the 'formal' institutions category as external entities, they is beyond the focus of this paper: the role of formal institutions specific to decentralized governance.

With the above in mind, the econometric model is specified as follows:

$$pov_i = \beta_0 + \beta_1 ngosoc + \beta_2\, instpol + \beta_3(ngosoc * instpol) + \boldsymbol{\beta_k}(municipal\ indicators) \quad (1)$$

Where the subscript *i* signifies community *i,* and β_k represents the parameter for variable *k.* These variables are defined in **Table 1**, including their respective descriptive statistics.

Table 1: Variable Definitions

Variable	Description and measurement
pov	% of the population living below the poverty line. This measure considers the cost of a basket that would fulfill minimum calorie requirements for survival, plus an allowance for non-food consumption. (SEGEPLAN) *Mean: 81% Range: [25.9%, 97%]*
ngosoc	Combined, absolute number of institutions from the social and NGO categories, as described above. *Mean: 11 Range: [2, 50]*
instpol	Combined, absolute number of institutions from the 'political' and 'institutional' categories, as described above. *Mean: 17 Range: [8, 40]*
instsoc	Interaction term between instpol and ngosoc. The relevance of this relates to the assertion that these formal and informal institutions are interactive in generating development. Furthermore, within the decentralization context in Guatemala, many of the PDMs identify the local actors active in COCODEs as those who are leaders in other social associations. Regardless of the actual influence of these actors, recall that the COCODEs in turn interact with other formal institutions within the municipal government to determine development priorities, suggesting that their interaction matters to the above model.
popdens	Population density, measured by the total population divided by the size of the land in $KM^{2.}$ *Mean:182 people/km^2 Range (in people/km^2): [21, 1063]*
indig	% of the population that are indigenous. To account for measurement of ethnic heterogeneity, the proportion of the indigenous population in each municipality was used. While this does not allow for deeper analysis of fractionalization within indigenous (Mayan) populations, it does address the more predominant issue of ethnic heterogeneity between the Ladino and Mayan peoples, as highlighted above. *Mean: 77% Range: [5%, 99.9%]*
rural	% of the population that live in rural areas. *Mean: 75% Range: [5.5%, 96.5%]*
literacy	% literate between the ages of 15-24 – used as an indicator of education. *Mean: 68% Range: [41.6%, 95%]*

phone	# of fixed telephone lines per 100 persons – used as a proxy for infrastructure. Most communities do not have regular access to a vehicle, roads, or public transport, limiting their market access. In addition, these areas are at high risk of landslides, collapsed roads and bridges (World Bank, 2008). As indicated above, this was impossible to record. Accordingly, this measure is used to control for infrastructure. *Mean: 2.15 Range: [0, 26.7]*
ageyoung	% of the population under the age of 14. *Mean: 47.5% Range: [35%, 53%]*
extpov	Alternate model specification for dependent variable - % of the population below the extreme poverty line. This measure considers the cost of a basket that would only fulfill minimum calorie requirements for survival (SEGEPLAN). *Mean: 32% Range: [3%, 65%]*
idh	Alternate model specification for dependent variable, based on the United Nations Human Development Index (http://hdr.undp.org/en/statistics/hdi/). *Mean: 0.53 Range: [0.31, 0.78]*
educ	Alternative model specification for dependent variable - rate of secondary school enrollment. *Mean: 35% Range: [7.9%, 100%]*

Note that many additional municipal indicators that one might consider important, such as education enrolment rates, distance to the city capital, etc. were insignificant to the model when included. Different model specifications that include these and other variables, such as the number of ethnicities within a municipality, were also attempted for robustness checks. These specifications, along with the general results of (1) above are described in Sections 5.1 and 5.2 below.

5. Discussion and Results

5.1 *Are informal institutions really the key to successful development?*

The results of the main regression can be found **Table 2**.

Table 2: Simple regression of institutional presence and type on poverty

```
. reg pov ngosoc instpol instsoc rural indig phone literacy ageyoung

      Source |       SS       df       MS              Number of obs =      31
-------------+------------------------------           F(  8,    22) =   35.93
       Model |  1782.0536      8   222.7567             Prob > F      =  0.0000
    Residual |  136.37726     22  6.19896637            R-squared     =  0.9289
-------------+------------------------------           Adj R-squared =  0.9031
       Total |  1918.43086    30  63.9476955            Root MSE      =  2.4898

------------------------------------------------------------------------------
         pov |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      ngosoc |  -.8200101   .2022077    -4.06   0.001    -1.239363    -.400657
     instpol |  -.5280533   .1239583    -4.26   0.000    -.7851271   -.2709795
     instsoc |   .0350787   .0085449     4.11   0.000     .0173577    .0527997
       rural |   .1450088   .0402844     3.60   0.002     .0614642    .2285534
       indig |   .1065446   .0203825     5.23   0.000      .064274    .1488153
       phone |  -.9034466   .4226222    -2.14   0.044    -1.779911   -.0269818
    literacy |  -.1332722   .0445566    -2.99   0.007    -.2256769   -.0408676
    ageyoung |   98.32239   28.11233     3.50   0.002     40.02099    156.6238
       _cons |   37.20383   13.47428     2.76   0.011     9.259894    65.14777
------------------------------------------------------------------------------
```

All coefficients are significant at the 95% level in this model. The results and their rationale are discussed below, but it is worthwhile to remark on a few of the statistical properties of the model. The R^2 statistic in this model suggests is it well fit at 0.93. A discussion of different model specifications that relate to this is presented in Section 5.2, and given in **Table 3** below. Note also that the confidence intervals remain consistent with the sign of the coefficients in all cases as well, an important factor for the interpretation of the results.

In terms of the coefficients themselves, it is evident that *ngosoc* has a larger impact on reducing the overall poverty than *instpol* with parameters of 0.82 and 0.53 respectively. In other words, if an additional social organization to establish presence within the municipality, it would reduce the poverty rate at a higher rate than if a government institution were to do so. We have seen this echoed in literature above, where informal institutions are defined to consist of the social and cultural norms necessary to bring them closer to local populations, in turn enabling better access to local information, lower transaction costs for social participation, and generally positive development influences.

However, we must be careful with the interpretation of this result, as it has also been demonstrated that the two institutional types are not mutually exclusive. In fact, informal institutions are generally considered limited in the capacity of what services they can provide without the resources of formal institutions (Opare, 2007). Similarly, formal institutions may have the structure and resources to generate development and in turn, reduce poverty, however they are not always effective in achieving development outcomes if they do not serve the priorities and needs of the communities they service. As Khwaja's (2006) study indicated, the interaction between communities and formal institutions—in his case, the institutions facilitating public good provision—was only beneficial to a certain point, and depended on the type of participation. On the other hand, Jackson (2009) discussed the risk of too many formal institutions crowding out the opportunity for trust and respective informal institutions to develop effectively. Ultimately, we must consider this result in the context of Guatemala's local conditions: decentralization,

and mistrust. The country's lasting legacy of ethnic conflict ensures that its indigenous populations will indeed respond better to informal institutions that uphold their cultural norms, which makes the above result intuitive. However, these institutions additionally need the support of government or other formal institutions to succeed. Perhaps, then, this leads to a question of *how* these institutions should interact in the setting of these local conditions—an area for future research.

In line with the question of *how*, let us consider the result of the interaction term (*instsoc*). The positive sign of the coefficient is interesting as it suggests the opposite of the former two and the theory I've presented so far: that more interaction between the types of institutions actually increases poverty. A possibility for explaining this relates to the manner in which these institutions actually interact. In spite of the fact that the decentralization decrees were aimed to facilitate these interactions, many indigenous actors or local associations that partner with the municipality to assist in development planning do not actually possess decision making power or a strong influence of any sort. This sentiment is suggested in numerous municipal development plans as a barrier to successful participatory development. For example, in 2010 the vice mayor of Uspantàn advised that community members *not* be a part of determining the allocation of the Municipality's development budget, rather they should be a part of its implementation (Infopress, Uspantàn 2010). If this is the case, than the benefit of having local information to prioritize this development planning in the first place becomes redundant, and could be considered a waste of the participants' time.

Consequently, if the decentralized regime is not supporting the community actors that compose the informal institutions and their interactions with the government institutions, this could create inefficiencies that hider the success of development and contribute to overall poverty. Such was the case described in Section 3.3: in the study by Elias and Wittman (2005) systems of communal management of forests were weakened by poor government support. Furthermore, this finding can also be related to the significance of historical factors in determining institutional success (Acemoglu et. al, 2001). With the length and severity of the conflict in Guatemala, it is makes sense that the interactions between formal and informal institutions are not yet perfected. Thus, the result of this measure indicates that the Western Highlands in Guatemala needs to address the process of decentralized governance and its relationship to the different institutions.

The influence of the other municipal indicators on poverty—*phone, literacy, ageyoung*, *indig* and *rural*—are consistent with the general trends in development literature. The struggles of rural areas is also consistent with the positive coefficient on *rural*, which suggests that the more urbanized the municipality is, the lower the level of poverty. This is consistent with literature comparing urban and rural poverty indicators, and specifically relevant to the case of the Western Highlands. In particular, and as alluded to previously, rural areas suffer from lower infrastructural resources, and in Guatemala are often composed of a higher concentration of indigenous population. As Section 2 details, it is these indigenous communities that were the main target for destruction during the war, so it makes sense that a higher proportion of rural residents contributes to poverty.

Similarly, the positive coefficient on *indig* demonstrates that the higher proportion of indigenous people there are in the municipality, the higher the level of poverty there will be. This finding relates to the above discussion of rural indigenous communities, as well as to the literature surrounding diversity and development presented in Section 3. In other words, the issue of mistrust creates coordination problems between ethnicities. In this study, the ethnic divide parallels the institutional division. As I have defined, the majority of informal institutions are comprised of indigenous populations, while the formal institutions are managed by non-indigenous populations and are non-indigenous in their overall structure and adaptability to indigenous cultural norms. Consider, then, that community members would be less willing to participate in a development council that reports to a municipal council, or in the development projects themselves. Not only would this evoke a cost of time – a large opportunity cost for subsistence farmers that make up much of the workforce in the Western Highlands – but also has the potential to impede culturally on the informal institutions in place, such as the indigenous mayor's authority.

Finally, the variables *phone, literacy* and *ageyoung* represent economic indicators that are equally intuitive. The negative parameter estimates on *phone* and *literacy* imply that if a municipality has a higher ratio of fixed phone lines per one hundred habitants (i.e., better infrastructure) or a higher literacy rate in youth (i.e., better education), than it will have a lower poverty level. Contrarily, if a municipality boasts a higher population of habitants under the age of fourteen, it will experience

higher poverty rates. This is because the younger residents are less likely to be a part of the labour force and generate income.

5.2 *Statistical considerations and extensions to the model*

As is the case with any empirical study, there are several statistical issues within the above model that need consideration. The most major of these is the potential for endogeneity within this model, which can cause bias and inconsistencies in the results of the model. More specifically, it is arguable that poverty is not just affected by institutional presence, but that poverty has an effect on institutions as well. To expand this further, consider the example of an institution – suppose a government branch – that has to select a specific municipality to invest in. They may select a community that is so utterly impoverished that the need is strong enough to demand investment. In other words, the level of poverty can actually affect the institutional presence, not just the vice versa.

Alternatively, one might argue that some institutions and organizations may only choose to invest in areas that are in the middle range of poverty rates, such that the projects can be better sustained (due to having some pre-existing infrastructure) and even expanded for the long term benefit of the community. The underlying motivation in this scenario relates more to formal institutions, and would benefit the institution as well if it is able to boast a higher number of success stories with its efforts and investment. The former of these two scenarios is more likely the case for the Western Highlands, given that the region was the worst affected area during the long and bloody conflict. There are, in fact, several

anomalies in the dataset that are consistent with this interpretation. However, given the severe impact of the war in the region (recall: destruction of physical capital, 'systematic' slaughtering of the Maya peoples), the endogeneity bias would be more concerning if we were comparing different regions within Guatemala, rather than an area that is universally a target for investment. The bias could lead to a high level of poverty in spite of the number of institutions with influence in a given area, especially if these are newly established institutions in a highly impoverished municipality, meaning that development outcomes would take longer to show. However, to the extent that this endogeneity may be true, the results are likely to have a downwards bias. Thus, the direction and relative scale of the results found in **Table 2** – while potentially biased – are still consistent, and should be considered as a lower bound for the scale of impact they represent.

There are a few approaches to dealing with potential endogeneity bias. These include using an Instrumental Variable (IV) or a proxy to overcome correlation with the error terms.[11] However, given the limited data available, finding an appropriate IV that does not sacrifice the relative comparison between different types of institutions is a difficult task within the scope of this paper and remains an area for future investigation.

Additional elements to consider within the results stem from the small sample size. A full initial analysis was conducted with all fifty-seven municipalities in the dataset using correlations to obtain an initial idea of the trends present in the

[11] See Acemoglu, Johnson and Robinson (2001), for an example of the use of IVs.

region. However, when it came down to regressions, the sample drops further to only thirty-one communities. This drop is mainly due to the delicate nature of recording the data. Some municipalities only provided a qualitative description of the relative institutional presence without giving an indication of the actual number or names of the institutions. In these cases, the municipalities could be considered within trends but not included in the regression analysis. Having a small sample size presents many potential statistical issues, such as more significant issues in the case of measurement error, and challenges to the external validity of the results.

The former of these is less of a concern with respect to the recording of data from the PDMs, as the strict, systematic approach taken is one of the reasons for the smaller sample size. With respect to the external validity of the conclusions, I have already taken consideration to suggest the characteristics of the findings that are specific to the Western Highlands region, such as the high level of mistrust and nature of the decentralized government. That said, there are many elements of the findings and model that can be adapted to apply to a different set of conditions, as is evident with their consistency to other studies described in Section 3. Moreover, when replicated with alternate specifications, the model was able to produce the same trends, as I detail below.

In addition to the obvious statistical challenges, it is worth mentioning several alternate model specifications that were attempted for robustness. The first relates to changing the measure of development, or the dependent variable. The variables used are described in **Table 1**. The first of these, extreme poverty, has

similar movements to the rate of poverty (84% correlation). The model produced the same direction and relative scale of the results as those in **Table 2**. The second alternate model uses the United Nation's Human Development Index as a measure of development outcome, which also has a high correlation with the rate of poverty at 80%, and produced the same trends.

A third measure used was secondary school enrolment. This measure of education may work for variety of reasons: an improvement in the level of poverty is indeed correlated with education with a correlation coefficient of 81%. In addition, in favour of alleviating some of the endogeneity bias, secondary school enrolment does not necessarily command a significant change in the level of institutional presence. Consider the reason for this in the context of the Millennium Development Goals, which focus on *primary* school enrolment. Then, *secondary* school becomes a subsequent outcome of improvements in primary school attendance, and general development.[12] Consequently, it is arguable that the institutional presence primarily affects the secondary school enrolment, but is not affected by it. The results of the regression again demonstrate an even stronger scale of impact for informal institutions on educational enrolment, relative to formal institutions. This result is intuitive if it has indeed helped alleviate the endogeneity bias. However, common with using a proxy variable, the regression does lose some accuracy and in turn, statistical significance – including a significant drop in the R^2 value down to 44%. The drop in R^2 evokes some concern, as there are a variety of

[12] Specifically, development can contribute to secondary school enrollment by lowering the opportunity cost for both students and their families, who often depend on children to work on farms, in turn enabling the children to go to school (World Bank, 2004). This is important for rural areas, where many communities live on subsistence farming.

factors that could be missing from this regression and could once again create an issue of correlation with the error term. In any case, the three alternate measures are consistent in demonstrating the trends of the model described in (1), which contribute to its overall validity.

In addition to the dependent variables, there were a variety of independent variables that were tested for significance to the model. All were found insignificant, did not impact the R^2 (and in some cases, lowered the adjusted R^2 value). The first of these worth mentioning is the squares of both *ngosoc* and *instpol*. I tested these values based on the rationale describe above with respect to the studies by Jackson (2009) and Khwajah (2006)—that there may be an upper bound for the positive effect on development by each type of institution. The rest relate to the set of municipal indicators that could impact poverty, and have been used in empirical studies to measure development before, such as education enrolment rates, total population, land size (in km), population density (persons per km squared), and the log of the distance in km to the capital city. None of these were significant when included with the model in (1), with the variables in **Table 2.**

However, there is one alternatively specified model worth examining in more detail, given in **Table 3**.

Table 3: Simple regression of institutional presence and type on poverty
(alternate specification, including population density)

```
. reg pov ngosoc instpol instsoc popdens indig rural

      Source |       SS       df       MS              Number of obs =      31
-------------+------------------------------           F(  6,    24) =   13.75
       Model |  1486.00369     6  247.667282            Prob > F      =  0.0000
    Residual |  432.427169    24  18.0177987            R-squared     =  0.7746
-------------+------------------------------           Adj R-squared =  0.7182
       Total |  1918.43086    30  63.9476955            Root MSE      =  4.2447

------------------------------------------------------------------------------
         pov |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      ngosoc |    -1.0209   .3447077    -2.96   0.007    -1.732342   -.309458
     instpol |   -.7070502   .2085497    -3.39   0.002    -1.137476  -.2766247
     instsoc |    .0434601     .01459     2.98   0.007     .0133479   .0735723
     popdens |   -.0145431   .0078331    -1.86   0.076    -.0307099   .0016237
       indig |    .1707855   .0303925     5.62   0.000     .1080584   .2335127
       rural |    .2471351   .0560351     4.41   0.000     .1314842    .362786
       _cons |    67.55361   7.564288     8.93   0.000     51.94169   83.16553
------------------------------------------------------------------------------
```

The model keeps the structure of the model given in (1) and the measures of dependent variables and independent variables of interest. However, it drops all other explanatory variables except for *indig* and *rural,* and adds in *popdens*. The motivation for this stems from the importance of land size and population density within a municipality, as it offers somewhat of a reflection of how sparse resources like educational institutions and transportation infrastructure might be.

All coefficients are significant at the 95% level, except for *popdens*, which is significant at the 10% level. Notice that the R^2 and adjusted R^2 measures both drop in this model to 0.77 and 0.72 respectively. While still a good fit, the model loses some of its explanatory power by dropping *ageyoung*, *literacy* and *phone*. Note also that the confidence interval remains consistent with the sign of the coefficient

except for the upper bound of *popdens*, which rounds to zero and accordingly does not create an issue.

The main conclusions that can be taken from this regression are akin to those in **Table 2**, and the intuition to support them remains the same. In terms of *popdens*, we see that a higher concentration of people per square kilometre helps alleviate the level of poverty. In some parts of the world where areas are over-populated, this effect is opposite. However, in the case of Guatemala, this is indicative of a) a larger urban area, and b) lower risk of infrastructural challenges, as even those in the rural areas are closer to the municipal centre. In the case of the Western Highlands, both of these factors contribute positively to reducing the level of poverty, making the result intuitive. We can see this in relation to intuition behind the rural and indig variables, as they indicate the less proportion of residents that are in the urban area of the municipality, the more impoverished it is likely to be. Ultimately, it is evident that there is room for further research to be conducted in order to produce a stronger analysis. In the meantime, this study does identify some important trends for consideration, as we will bring altogether in the final section.

6. Conclusion

"Guatemala's land is rich and fertile, yet its people are hungry and poor. The country whose first agriculturalists domesticated and harvested corn now has to import it from the United States. The paradox is disconcerting." (Lovell (2000), 84)

As we have seen, the vast scale of diversity—within both ethnic, and socio economic inequalities—in Guatemala, along with its variety of institutions, shocking history and developing political structure dictate a complex and fascinating environment for development planners. An analysis of 57 municipalities in a country of 222 is but a tantalizing, albeit revealing preview of the institutional environment that exists in Guatemala. All municipalities were within the same region, allowing for fixed effects in community indicators such as geographic (Western Highlands), cultural (strong indigenous Maya descent), and with a similar foundation in historical and political origins, infrastructural accessibility, and level of poverty. Yet, each municipality has seen development challenges manifest on a different scale, in turn varying the role for formal and informal institutions. As the data and analysis suggests, all municipalities necessitate a role for both formal and informal institutional intervention. Moreover, social institutions generally have a stronger positive effect on development, within the decentralized, fractionalized context of Guatemala. In spite of this result, it was asserted that the two types must also interact such that the values and relevance of informal institutions is upheld within the formal ones, and do so in a manner that actually fosters effective participatory development. This fact affirmed the importance of the ability for discretionary

policy to be transferred in the decentralization process in order for the impacts of ethnic division to be minimized and governance effectiveness to be maximized.

Indeed, participation in Guatemala has been identified as a necessary focus for the country to overcome the many barriers it faces and further its development. Conclusions from the above analysis imply that the right direction is being taken, but still encounters serious challenges in terms of defining the exact institutional roles relative to local conditions and existing informal institutions. National campaigns in support of the indigenous population have helped create a solidarity between different Mayan groups living in rural areas, however it has also been argued that they have also reinforced individual ethnic identities and/or the divide between indigenous and non-indigenous populations with an us vs. them mentality (Dehart, 2009). Ultimately, the complexity of the ethnic division and development challenges in Guatemala demand that institutions fortify trust and relationships between ethnic groups, foster community participation, and maintain a balance of relevance, support and cooperation between their own interactions.

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Appendix 1: Methodology - extended

The following keywords were used to filter the PDMs to relevant sections. The original list had over forty words, however once the SIM documents were released it was not necessary to keyword search for the demographic, social and economic indicators, as they were presented in a summarized document. Once the keyword was found, it was reviewed on each page that it appeared and the respective section was read in its entirety. Note that the grouping is by relevant section, not alphabetical.

Keyword – Spanish (English)	Definition/use
COCODE	To determine the number of COCODEs in the municipality, and its ethnic and gendered composition where available.
COMUDE	To determine whether there is a functioning COMUDE in the municipality, and its ethnic and gendered composition where available.
Communidad (community) OR Lugares poblados (populated centres)	To determine the number of communities in the municipality.
Microregione (Micro-region)	To determine the number of micro-regions in the municipality, which are communities grouped into regional areas of relevance.
Ethnicidad (ethnicity) OR Idioma (language)	To determine the ethnic composition of the municipality, and how many languages are spoken by what percent of the population.
Transporte (transport) OR Pick-up (pick-up truck) OR Carreterra (paved road)	To attempt to determine the transportation infrastructure within the municipality

Institucional (institutional) AND Actors (actor)	To determine the presence of institutions in the municipalities. In every single municipality, the section "Dimension Politico-Institucional" was read in its entirety to ensure accuracy of the data With respect to 'actor', some municipalities gave more details about the institutions, discussing their influence as 'local actors'. Accordingly, this term was searched and read in context to provide additional background to the institutional presence

Within the Political-Institutional section, the list of institutions were searched by name on the Internet and, where possible, verified for their characteristics. This led to the case of Fundacion Movimondo (http://www.fundacionmovimundo.org/), which was considered an International institute by several municipalities within which it has presence. However, the structure of the organization is such that it receives funding from the Geneva based organization "Pro-Victimis" (http://www.provictimis.org/). Pro-Victimis is a granting organization that describes itself as follows on the home page of their website:

"Established in 1988, the Pro Victimis Foundation (PVF) is a private grant-making foundation that operates internationally to bring about lasting changes in the lives of the most disadvantaged and vulnerable communities in developing countries.

To promote the economic and social development of those most in need, PVF funds projects or programmes implemented by local non-governmental organisations, community-based organisations or social entrepreneurs. Priority is given to population groups and issues that receive little or no attention."

Then, by this definition, Movimondo indeed fits the description of a locally based NGO, focusing on marginalized groups. However, this information was not enough. The most important characteristic of defining a non-governmental organization as an informal institution is that the community it serves perceives it as local, and can relate their cultural and social norms to the organizations' operations. Thus, the decision was further confirmed by my personal experience working with the organization. While they have multiple factions, each faction is located within the community (i.e., even more local than the municipality), and has community members (indigenous and non) involved at decision-making levels.